Version

5

INTERACTIVE FRONTIERS, INC.

The V1 Professional Digital Coaching System 5.0

User's Manual

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THE V1 PROFESSIONAL DIGITAL COACHING SYSTEM 5.0

User's Manual

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Chapter 1

Getting Started

A Quick-Start guide to this powerful new release

This chapter contains valuable information about the installation and basic operation of the V1. It begins with an overview of what's new since 4.0. There's also an overview of the user interface, and an overview of how the V1 is used in a coaching environment.

What's New in Version 5.0?

Some of this release's most significant changes are "under the hood"—that is, in the V1's "engine." Version 5.0 takes advantage of the latest high-quality PC graphics and video technologies available to date, including Microsoft's DirectShow® for video capture and playback, and IEEE-1394 (FireWire®) connectivity. However, there are also numerous new and enhanced analysis and productivity features including the following:

- Dual FireWire® camera support. With two FireWire® ports and two compatible digital cameras, you can preview and record two full views simultaneously without using additional video mixer hardware.
- Support for tool-less video output on secondary display (requires Windows® XP).
- Video overlay. Take two videos in Compare Mode and blend them together into one image.
- Multiple-exposure time-lapse. View a fluid motion in a single image.
- The **Slide** tool now operates outside of Compare Mode and has a "zoom" feature. Hold down the right mouse button over the video and then move the mouse up and down to zoom in and out.
- CD-RW support (via DirectCD) to move video tabs directly to CD.

- Use your mouse wheel to advance frame by frame.
- The video position sliders control both movies in Compare Mode when swing synchronization is enabled.
- Automatically check the Internet for updates.
- Run the V1 in a "window" on your desktop.
- Redesigned hardware options interface
- Redesigned Internet Golf and Sports Academy interface

System Requirements

The V1 has the following minimum requirements:

- Pentium® II or Celeron® 400MHz or higher
- 64MB system RAM
- 1GB UDMA hard disk
- CD-ROM drive
- Microsoft® Windows® 98 SE (Second Edition)
- DirectDraw® compatible display adapter with overlay & color-key capability
- SVGA monitor (800 x 600)
- 56K v.90 modem with Internet connection (For use with the Internet Academies)

The V1 has the following recommended configuration:

- Pentium® III 500MHz or higher
- 128MB system RAM
- 20 GB or larger UDMA hard disk
- Cable modem or DSL Internet connection (for use with the Internet Academies)
- Digital video camcorder

- PC microphone (for audio hit-detection)
- DirectDraw® compatible display adapter with at least 4MB video memory d overlay & color-key capability
- IEEE-1394 DV interface
- Sound Card
- Microsoft® Windows® 2000 or Windows® XP
- Optical mouse with wheel
- Compatible scan-converter to view output on a standard video monitor

You also should consider the following accessories to maximize the V1's versatility:

- Wireless microphone
- Digital camcorder
- 4-Head VCR
- External video monitor

Loading the Software onto Your System

You may have purchased a computer system pre-loaded with the V1. If you are installing the V1 yourself from a CD, follow these steps to load the V1 software onto your system:

1. Insert the V1 software CD into your CD-ROM drive.
2. Wait a few moments. Most Windows® systems will detect that a CD has been inserted, and then automatically launch the "setup.exe" program on the CD.
3. If setup begins automatically, skip to step 7.
4. Click the Windows® **Start** button and then click **Run**.
5. In the Open window, type the letter assigned to your CD-ROM drive followed by a colon and the word "setup." (For example, d:setup).
6. Click **OK**.

7. If you receive the message "InstallShield engine (ikernel.exe) could not be installed," please re-run setup. This condition usually corrects itself.

8. Follow the on-screen instructions to properly install the software.

9. You must accept the end-user software license agreement by clicking **Yes** to continue the installation.

10. We recommend that you accept the default destination location (c:\v1_50).

11. We recommend that you install all software components.

Choosing to install the "empty database files" will overwrite any information contained in your V1 database from a previous installation (at the chosen destination location).

12. The V1 will automatically create icons for the V1 on your desktop and on your **Start** menu. We recommend that you accept the default program folder (Interactive Frontiers).

13. The installer will detect a V1 version 4.0 installation and offer to import the 4.0 database files.

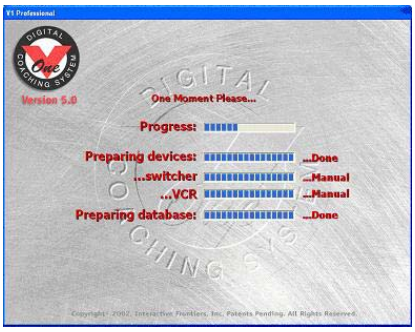
14. Now, double-click the V1 software icon and you are ready to begin using the V1.

Launching the V1

To start the V1 software, double-click the **V1 professional** software icon found on your desktop. You may instead click your computer's **Start** button, then **Programs**, then **Interactive Frontiers**, and then finally **V1 Professional Version 5**.

On most systems, the desktop will be resized automatically to 800x600 resolution, and the following menu will appear:

When you click **Start** the following "loading progress" screen will appear:



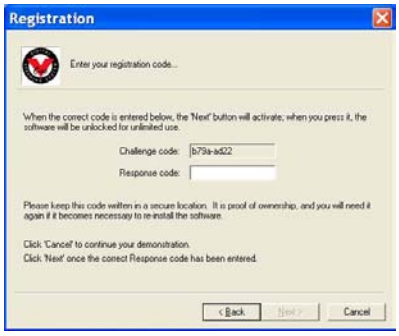
When progress reaches 100% (the white areas have been fully replaced with blue rectangles), the software has been loaded and initialized.

Software Registration

If you purchased a "software only" version of the V1, it may be necessary to "unlock" the V1 before all software features become available. Here's the "Welcome" window that you will see:

Welcome
Welcome to the V1 Digital Coaching System Version 5.0
The V1 is Copyright ©2003 Interactive Frontiers, Inc.
This software may be used in demonstration mode for 10 days. In demonstration mode, live video and video recording are disabled.
To unlock the software for unlimited use and to enable all features, you must purchase a software license. Contact Interactive Frontiers at +1-734-464-2841, or visit us online at:
www.v1golf.com
Number of days remaining in free trial: 45
Click 'Next' to continue registration now, or click 'Cancel' for demonstration mode.
< Back
Next >
Cancel

You may use the V1 in demonstration mode for up to 45 days by clicking **Cancel**. In demonstration mode, it is not possible to view live video or to record. To continue with registration, click **Next**.


Registration
Enter your registration code...
When the correct code is entered below, the 'Next' button will activate; when you press it, the software will be unlocked for unlimited use.
Challenge code:
b79a-ad22
Response code:
Please keep this code written in a secure location. It is proof of ownership, and you will need it again if it becomes necessary to re-install the software.
Click 'Cancel' to continue your demonstration.
Click 'Next' once the correct Response code has been entered.
< Back
Next >
Cancel

The "Challenge Code" is unique to your computer. To obtain the corresponding "Response Code," contact your dealer or Interactive Frontiers directly. When the correct code has been entered, the **Next** button will be activated.

About the User Interface

Here's a shot of the V1's main user interface window:

Command buttons are large for ease-of-reading and for the easy use of "tablet and pen" input devices. Buttons are also high contrast for ease-of-recognition and easy outdoor use.

The large "video window" is surrounded by the V1's buttons. It's here that videos are displayed and live video is previewed. This window is not simply used for viewing, however. Once you have selected one of the V1's drawing tools, you may then use that tool to draw directly onto the video. Details can be found in the *Digital Illustration Tools* chapter.

There are five groups of command buttons. The two groups found above and below the video window allow you to open and navigate videos. They are described in chapter 2, *Video Playback*. You'll also find the **Exit** button located here (use this when you're done with the V1), as well as the **IGA** button (see chapter 9, *The Internet Academies*) and **Student** button (see chapter 8, *Working with Students*).

The **Video** button group is home to the **Record**, **Compare**, **Trim**, **Delete**, **Move** and **Swing Info** buttons. Recording is covered in chapter 3, *Video Recording*. Video comparison is covered in chapter 2, *Video Playback*. The remaining buttons are covered in chapter 4, *Working with Videos*.

The **Drawing Tools** button group contains the tools which allow you to graphically analyze video. Here you'll find basic essentials such as freehand, lines, angles, circles, boxes, and text. You'll also find the **Clear** and **Undo** buttons here. The **Snapshot** button allows you to save your graphics with the video. See chapter 5, *Digital Illustration*, for complete details.

Buttons found in the **Digital Effects** group activate many of the V1's signature features. Here you'll find tools for illustrating the swing plane, illustrating curves and arcs, and showing the swing tempo. The **Flip**, **Slide**, **Enhance**, and **Magnify** tools allow you to digitally manipulate the video image. The **Overlay** feature is an advanced comparison tool. This is also where you'll find the **Print** command button. Full descriptions of these features are split between chapter 6, *Digital Effects*, and chapter 7, *Advanced Digital Effects*.

Button States

Active buttons are drawn in a highlighted or contrasting background color. To activate a function or button, click it.

Some functions act in "groups." For example, only one of **Pause**, **Play**, and **Slow** may be active. When you click one of these, the others in the group automatically deactivate. For more on the function of the "Digital VCR" tools, see the *Video Playback* chapter.

Other buttons act as switches. When you click one of these, the function is activated. When you click again, the function is deactivated. For example, **Flip** and **Tempo** work this way.

Some buttons act simply as momentary buttons—pressing one of these causes an action, but the button does not remain activated, and requires no deactivation. Examples of these are **Clear** and **Undo**.

Still other buttons act as menus. When you click them, menus with more buttons and function choices appear. Examples of these are the **Print**, **Text**, **Record** and **Animations** buttons.

Virtual Keyboard

The V1's virtual keyboard automatically appears whenever the PC's keyboard would normally be required. You may use your PC's keyboard and the virtual keyboard interchangeably.

There are numerous user interface options, some of which may be helpful to someone just learning to use the V1. These are described in the chapter *More Software Options*.

Teaching with the V1 – An Overview

If you're like most people, you'll soon be asking yourself how you ever taught *without* the V1.

When you begin work with a student, click the **Student** button. If this is a new student, click **Enroll** and enter the student's information. If this is a returning student, locate the student's name on the alphabetical list and select him as the **Current Student** by double-clicking the name. A list of the student's videos is presented. You may double-click a line on the list to open the corresponding video in order to review a previous lesson. See the *Student Database* chapter for details on working with student records.

By adding a VCR and a wireless microphone, you can provide your students with a record of their lesson for later review and reference. If you are using a VCR, insert a new tape, and begin recording. Verify that your wireless microphone signal is being received if there are audio signal meters on the VCR.

Use the V1's **Live** button to begin live video preview. Adjust position and camera angles to best frame the student's motion to be analyzed. Use the **Record** button to capture the student's motion. See the *Video Recording* chapter for details.

Open the video that you just recorded. Click **Compare**. Open a model video, or one of the student's previous swings in order to make a comparison. See the *Video Playback* chapter for details.

Use basic digital illustration tools such as lines, angles, and circles to demonstrate differences in motion in the videos being compared. Also, highlight and discuss areas in the student's motion which require attention. See the *Basic Digital Illustration Tools* chapter for details.

Finally, don't forget to take advantage of the V1's most powerful tools, the *Advanced Digital Effects*. Consult that chapter for information on using those features.

Chapter 2

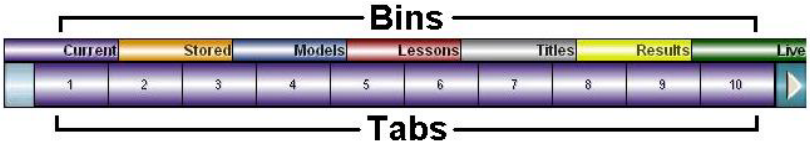
Video Playback

Getting immediate results

Ok, you've just installed your V1, and you're ready so see what this package can do. The first thing you'll want to do is to learn how videos are organized in the V1, and how to open one of the model videos that was installed. Read on…

Previewing and Opening Videos

The V1 stores video files as "tabs" in one of five "bins." Bins act as storage categories and help you to organize your videos. The bins have the default names of **Current**, **Stored**, **Models**, **Lessons**, and **Titles**. Two additional bins appear—**Results** and **Live**—which do not store videos, but have special uses as described later.



You will notice that tabs are color-coded to match parent bin colors. When you click a bin button, tabs belonging to that bin will be displayed below the bin names. Only 10 tabs are displayed at a time. If the **Current** bin has more than 10 tabs, arrow buttons will appear on either side of the list of tabs to allow you to scroll left and right. If your system has a large number of tabs, you may hold down an arrow button to continue scrolling with acceleration. Oh, and in case you were wondering, each bin can hold up to 9,999 tabs.

NOTE: A new recording is always placed in the **Current** bin at the next available tab position (either the first "hole" or at the end of the list). As the **Current** bin becomes cluttered, it's then up to you to **Delete** tabs or **Move** them to other bins for long-term storage. See the *Working with Videos* chapter.

It is unnecessary to open each video in order to preview its contents. Instead, you merely need to pass the mouse cursor over the tab, and a video preview window is opened in the upper-right corner of the V1's window. It will look similar to this one:

Beneath the video preview image, you will find the "Tab ID," the student's name, the date, and the duration of the video (in seconds). The Tab ID is an 8 character label that you can give to any tab. If present, the Tab ID is displayed on the tab beneath the tab's number.

A "loudspeaker" icon, if present, indicates that the video has an audio track.

To open a video, click its tab. The video will open full-size into the V1's main window.

The Digital VCR Tools

Video controls that appear similar to those found on a VCR appear at the bottom of the V1's window. When a video is opened, these controls become available.

When the video is not moving, the video is said to be "paused." To move the video by a single frame either forward or backward, click the appropriate **Step** button found on either side of the **Pause** button. Each of these buttons may be held down to advance frame-by-frame until you release the button.

To begin slow motion, either forward or backward, click the appropriate **Slow** button found next to the **Step** buttons. To stop slow motion, click the **Pause** button.

To play the video at full speed, click the **Play** button. There are specific situations in which the **Play** button is unavailable. These include Compare Mode when both videos are selected, and when the video is "flipped." Each of these features is discussed in subsequent sections.

To stop slow motion or full speed playback, click the **Pause** button. Playback will "wrap around" and continue indefinitely if the **Replay** button is highlighted. Click the **Replay** button to alternately enable and disable this feature.

Video may be "randomly accessed" in a quick-shuttle fashion by using the video position slider.

The slider has a movable "handle" that represents the position of the video. When the handle is at the far-left side of the slider, the video is "rewound" to its beginning. When the handle is at the far-right side of the slider, the video is at the end.

The slider's handle is automatically repositioned when the position of the video changes as a result of the use of one of the VCR controls. You may, however, manipulate the slider's handle manually by clicking and dragging it. The video will be immediately updated on the screen to reflect your movement. Note that with longer videos, the slider will seem more sensitive—small movements of the slider will represent more video frames.

The Mouse Wheel

If your mouse has a "wheel," you may use it to advance the video frame-by-frame. In the example to the left, the wheel is shown in green. To use the mouse wheel, first position the cursor over the video. Then rotate the mouse wheel down (use your finger to pull the top toward you) to step the video forward. Move the wheel in the opposite direction to step the video backward. Each "step" of the wheel will correspond to one video image.

Impact and Swing Position Buttons

The V1 has the capability to memorize up to eight key video positions. In the context of a golf swing, the most important of these is the "impact" position—the frame nearest the point in time when the club hits the ball (also known as the Impact Point). In fact, several of the V1's features require that the impact point of a swing be set before those features become available.

A video's Impact Point may be set automatically—see the Recording Options section of the *Video Recording* chapter. If a video's Impact Point has not been set, you will see this button:

Click the **Set Impact** button once you have advanced the video to the proper impact frame. Once the Impact Point has been set, you will see the **Swing Position** buttons:

There is a software option which limits the number of **Swing Position** buttons to four instead of eight. If this option is selected, you will see only the address, top-of-backswing, impact, and follow-through buttons.

When impact is set for a swing belonging to or assigned to one of your existing students, the V1 will "estimate" the other positions based on the student's most recent swing. If the swing does not have a student assigned to it, the V1 will estimate the other swing positions according to a default "average" swing tempo.

To immediately advance the video position to any one of the swing positions, click the desired **Swing Position** button.

If you wish to change the Impact Point, or any other position, first advance the video to the appropriate frame, and then hold down the desired **Swing Position** button until a "new point has been set" message is displayed. Certain V1 features either require or work more effectively if the important swing positions (address, top-of-backswing, impact, and follow-through) are set accurately. These features include **Tempo**, **Swing Synchronization**, **Trace**, and **Multiple Exposure**.

Comparison

The V1's video window may be split to allow you to open and control two videos simultaneously. The **Compare** button will activate Compare Mode. Once pressed, the **Compare** button will become the **Analyze** button. Use the **Analyze** button to exit Compare Mode and return to use of the entire video window for a single video.

In Compare Mode, the video position slider will split into two, and there will be three new buttons with arrows.

The orientation of the split is determined by a setting on the Playback Options window discussed in a section to follow. Side-by-side comparison is best for golf video, while top-to-bottom comparison is probably best for swimming video. The arrow buttons allow you to select which video you wish to control with Digital VCR tools such as **Step** and **Slow** motion. It is not possible to **Play** both videos at full speed simultaneously.

If an attempt to select the button (to control both videos simultaneously) fails, it may be caused by the fact that the **Swing Synchronization** feature (described in a section to follow) requires that each swing first have its Impact Point set.

There are several V1 features which become available in Compare Mode. **Swing Synchronization** and **Compare to Live** are described in following sections. Read about the **Slide** and **Overlay** features in the *Advanced Digital Effects* chapter.

Swing Synchronization

Different golfers swing their clubs with different tempos. That is, they take varying amounts of time to move their clubs from address to impact, and from impact to follow through. When two such swings are compared and put into slow motion the V1 has the ability to either "speed up" or "slow down" either one of the swings in order for them to share the same apparent tempo.

This feature is engaged with a check box on the V1's playback options window. To find this window, start the V1, click **Options**, then **Hardware Options**, and then click **Playback** at the top of the window.

When **Swing Synchronization** is engaged, it will only be possible to use the button to select both videos if each video has its Impact Point set.

When you first use the button to select both videos, the V1 will move each video to the most recent key position of the left-hand video. You will then be able to use either video position slider or the **Slow** motion buttons to view the two swings in synchronization.

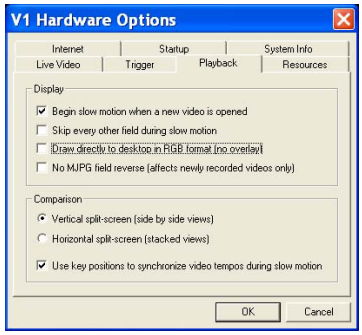
The accuracy of **Swing Synchronization** depends on the accuracy of the **Swing Position** settings for each swing. Although **Swing Synchronization** will be possible after only specification of the Impact Point, you'll probably prefer the results you achieve after setting the address, "3 o'clock," top-of-backswing, and follow-through positions as well.

Compare to Live

When in Compare Mode, you may click the **Live** button to open live video on the selected side. It is possible to use the **Slide** tool on the live video window. Note: if you wish to overlay a video with live video, you must first exit Compare Mode, and then use the **Overlay** feature as described under *Advanced Digital Effects*.

Playback Options

To access the Playback Options window, start the V1, select **Options**, and then click **Hardware Options**. Select the **Playback** tab. The following window will appear:



The options available to you here are as follows:

If you select the **Begin slow motion when a new swing is opened** option, a video will enter slow motion as soon as you open it. This does not apply to video opened in Compare Mode.

Skip every other field during slow motion. On slower and/or older systems, you may notice that slow motion is a bit too slow. When you select this option, the V1 will skip every other field of video in an attempt to "speed up" slow motion.

The **Draw directly to desktop in RGB format (no overlay)** option applies to full-speed playback. Normally, the system uses a "video overlay" (not to be confused with the V1 feature of the same name) in order to efficiently display playback with the highest possible quality. However, on systems configured to use external video displays and/or VCR's, this may result in the appearance of a "pink screen" on one of the two displays or the video tape. When you select this option, this pink screen is avoided at the cost of some video quality (especially on slower/older systems).

The **No MJPG field reverse** option applies only to video recorded using the MJPG video compressor. The MJPG compressor is used for Legacy VfW capture devices, and some DirectShow drivers, but is not used for DV videos captured using a DirectShow driver (details discussed in the Live Video Options section). If your recorded videos exhibit a behavior where the video is fine quality, except that the video appears to step forward two, then back one, forward two, etc., then your system might require this option. Note, however, that changing this setting will not fix existing videos. Its effect will only be noticed with videos recorded after the setting has been changed.

The comparison section of the Playback Options window contains options which affect Compare Mode (discussed above). In Compare Mode, the two videos may be viewed side-by-side or "stacked" and viewed top-to-bottom. The **Swing Synchronization** option affects slow motion when both videos are selected by causing the faster video to be "slowed down" to match the tempo of the slower video.

Chapter 3

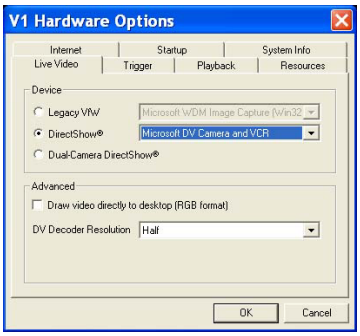
Video Recording

Bringing new video into your system

The V1 supports several different technologies for recording video (this is sometimes referred to as "video capture"). Please read this chapter to discover and understand the technology choices that you have with your particular system.

Live Video Options

To access the **Live Video** options window, start the V1, select **Options**, and then click **Hardware Options**. The following window will appear:



There are three "device" choices. For single-camera setups, the ideal configuration is DirectShow® using the "Microsoft DV Camera and VCR" driver. This will provide optimal video quality.

If Windows® is unable to detect a camera, the DirectShow list box will be empty. In this case, you may wish to close the **Hardware Options** box, turn your camera off, check its connections, turn it back on, and then click **Hardware Options** again.

Certain older system configurations including older capture devices and operating systems may be unable to use DirectShow for video capture. In this case, your only option may be to use the "Legacy VfW (Video for Windows)" mode. If you find that your system is unable to use the DirectShow mode and you had a system that was

working well with the V1 version 4.0, your system should continue to operate with "Legacy VfW" selected, as it provides essentially the same technology used in the V1 version 4.0.

dual-camera DirectShow mode is only possible if there are two or more cameras listed in the DirectShow list box. The dual-camera mode will open the first two cameras on that list, and present them in a split-screen in your V1 window. Consult the next section for more information regarding the use of two cameras.

There are two options on the **Live Video** options window under the heading of "advanced." The first, **draw video directly to desktop** should only be used under specific circumstances, as it results in a decrease in the previewed video quality. You may wish to enable this feature if you experience a "pink screen" when using Live Video on an external video display or VCR.

The second option, **DV Decoder Resolution**, applies only to systems using IEEE-1394 (FireWire®) cameras and the DirectShow device mode. Most systems will require this to be set at "Half." High-end systems will adequately handle "Full." If a system is not quick enough to handle "Full" DV resolution, live video will appear excessively delayed and possibly choppy, and some recording errors may be observed. Lowering this setting does cause some reduction in previewed live video quality, but does not affect recorded video quality and video playback.

If you are using either DirectShow or dual-camera mode, you may also access the Live Video options window by holding down the **Live** button for 3 seconds. With Legacy VfW, holding the **Live** button causes a Video for Windows configuration window to appear instead.

Using Two IEEE-1394 Cameras

Use of two digital cameras simultaneously offers many benefits. First, there is no longer a need for an expensive external hardware "video mixer" device—this is done internally using software. Second, the center of each video frame is previewed, as opposed to the left and right sides exclusively, which forced odd camera angles to achieve the desired affect. Finally, two full-frame videos are produced when recording with this mode.

Initial-release limitations of this feature have been resolved. It is now possible to use the advanced live option **draw directly to desktop in RGB format**, meaning that your dual-camera live video will appear on your external video monitor display. It is also now possible to use the "continual" recording option with dual-cameras. This ability is, however, dependent upon the ability of your PC to "keep up" with the demand of writing to two movie files simultaneously—slower PCs, especially laptops may be unable to meet this challenge.

If you experience problems with bringing your system up in dual-camera mode, try turning both cameras off. Then, turn your cameras on one at a time, pausing several seconds between cameras. Click the **Live** bin button to reset the video window. Additional help may be found in the Troubleshooting section at the end of this manual.

Live Video Preview

When the V1 completes its loading process, it will attempt to display video from the configured camera(s) as covered in the previous sections. If live video is unavailable, a message with an error number will be displayed on the screen. To reset the display of live video at any time, press the **Live** button. The **Live** button is also used to return to live video after viewing your saved videos.

Hold down the **Live** button in order to quickly access the V1's **Hardware Options** window. If a "Legacy VfW" capture device is in use, however, holding the **Live** button will open a window for configuring Video for Windows.

Depending on your system's configuration and Live Video options settings, live video preview may be of high quality, or it may leave something to be desired. In any case, the V1 will attempt to record the actual video to your hard drive at the maximum quality and resolution available.

Switching Camera Views

It is unnecessary to return to the **Hardware Options** window to switch between cameras, or to switch between single and dual-camera modes. By default, the V1 will display the following tabs when live video is displayed:

Use these buttons to quickly change cameras. The number of camera buttons available here is determined by the "Camera Views" settings on the **Options** page. See the *More Software Options* chapter for details.

Several illustration tools and digital effects are not available for use with live video preview. These include **Zoom**, **Print**, **Plane**, **Enhance**, **Time-Lapse**, and **Flip**. In addition, with a Legacy VfW capture device, it will not be possible to draw at all on the video window.

Recording Options

When you click the V1's **Record** button, a menu with five recording choices appears.

The first is **Continual**. This recording mode allows you to record videos as large as you'd like (that is, up to a Windows® limitation of 2 gigabytes, about 20 minutes, or until your hard drive space runs out). When recording begins, the **Continual** icon will alternate with a **Stop** icon. Press either icon to end recording. A new video will be created in the **Current** bin, at the next available position (either the first "hole" or the end of the list). To view your new video, click its tab.

The last is **IGA**. This allows you to create an Internet lesson in response to a swing that a student assigned to you by using the V1 Home Edition software an Academy website. Please consult the *Internet Academies* chapter for more information.

The remaining three options are variations of "triggered" recording. In a triggered recording mode, the V1 buffers live video, and waits for a signal that impact has occurred. Impact may be triggered in one of two ways. First, the sound of a club hitting a ball may be "heard" by the computer through a microphone. Alternatively, you may position the cursor over the video and "tap" with the pen or left mouse button at the moment of impact.

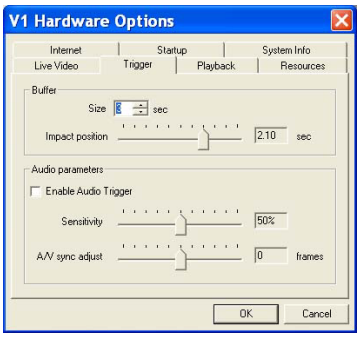
The size of the buffer (amount of total time recorded) and the position of the impact frame within the resultant video (how much time is recorded both before and after impact) are determined by Impact Trigger Options as covered in the following section.

The three triggered recording modes are **Single**, **Multiple**, and **Multiple No Replay**. With **Single**, only a single swing or other event is captured, saved to a video and tab, and immediately played back in slow motion. The **Multiple** recording mode adds the feature of returning to the triggered recording state immediately after the video has finished playing in slow motion. The **Multiple No Replay** mode exists to rapidly capture events or swings without the slow motion playback between each recording. To stop any of these recording modes without saving an additional video, press the **Record** or **Stop** button.

The V1's **Time Indicator** reflects the amount of hard drive space you have available for new recordings (expressed in minutes and seconds). The time decreases as recording progresses. In triggered recording modes, the **Time Indicator** is used as a "time out" counter. If a trigger is not detected in the allotted time, recording is automatically cancelled.

Impact Trigger Options

To access the Trigger Options window, start the V1, select **Options**, and then click **Hardware Options**. Select the **Trigger** tab. The following window will appear:



Using this window, you may specify the size of the buffer (in seconds) used to capture the video. Golf swings can typically be adequately represented in a 3 second time window. Other motions may require varying amounts of time. Each second of video will consume approximately 3½ megabytes (MB) of your computer's RAM memory (7 megabytes for dual-camera mode). If your system has only 128MB RAM, for example, it may be impractical (more likely impossible) to capture 15 seconds of video in dual-camera mode. If your hard drive runs continuously while doing a triggered recording or video becomes excessively choppy, you may be experiencing a low-RAM situation.

The Impact Position setting allows you to graphically place the point of impact within the captured video files. In a 3 second golf swing, about 1 second should be allocated to "follow through"—so that leaves 2 seconds as the impact position within the video. In other words, the difference between the buffer size and the Impact Position determines the amount of time that the V1 will continue to record following receipt of the impact trigger (either from an audio hit detector or a mouse click).

When performing a triggered recording, you may specify the impact position (and end the recording) by clicking the mouse on the live video window. If the **Enable Audio Trigger** check box is checked, the V1 will also listen to the computer's microphone for the sound of impact (the sound of the club or bat hitting a ball, for example).

There are two parameters which affect the audio trigger. The first is the microphone **Sensitivity**. From experience, we have found that a value of about 15% works for most situations. The second is the **A/V sync adjust** parameter. Very often, due to computer hardware and driver latencies and buffering, the computer microphone's audio and the capture card's video may not be in perfect synchronization. The A/V sync adjust parameter allows you to add or subtract a small number of frames from the impact frame number that the V1 computes based on audio received. With "full" and even "half" preview-resolution DV video, it is not unusual that this value be as great as +/- 10 or more. Under situations of varying computer load (other software running,

or use of laptop battery), an accurate setting of the adjustment may also drift. Experience will determine the optimal setting for your particular system configuration.

Note that microphone sensitivity is also determined by a Windows® setting. If your audio hit detector is not working, you may want to check this setting. From your desktop, double-click the speaker icon in the taskbar (it's next to the clock in the lower-right hand corner of your screen). If you don't have a speaker icon there, you should first turn it on from the Sounds and Multimedia control panel. Switch to "recording control" by choosing "properties" from the options menu. Make sure that your microphone is "selected" and that its "volume" is set to about half.

Recording Audio

Audio may be recorded and played back if a tab is recorded using the **Continual** recording mode. Audio is never recorded when using the triggered recording modes.

Audio is always recorded from the camera's built-in microphone when using a DirectShow video driver to capture DV video (as from an IEEE-1394 or FireWire® camera). To record audio when using a Legacy VfW video capture driver, you must select the **Audio** button before recording begins.

Note: when in "Legacy VfW" mode, depending on the driver, audio may be recorded from either the camera's microphone or the PC's microphone.

When a video is recorded with audio, a small "loudspeaker" icon will appear in the preview window when you move the cursor over a video's tab. To hear this audio, you must select the **Audio** button before video playback begins.

Chapter 4

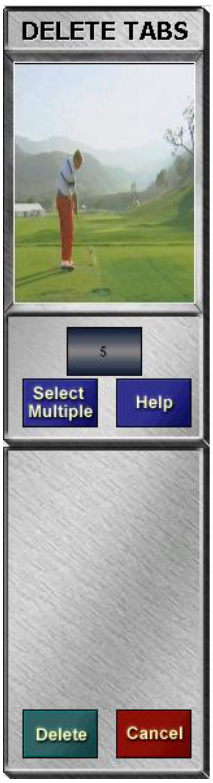
Working with Videos

Keeping things organized

Now that you've learned how to record and retrieve video, it's time to learn how to keep your V1 organized so that you can easily find the videos that you need when you need them. In this chapter you will learn how to Delete, Move, and Trim (shorten) your videos. You will also learn how to backup your videos, and share your videos with other V1s.

Delete

Open a video, and then click the **Delete** button to show this window:



To proceed with the deletion, click the **Delete** button on this window. To close the window without deleting, click **Cancel**.

Note: when tabs are deleted, there will be "holes" left in the bin where the tabs once were. When new videos are recorded or moved to the bin, these holes will be used first before new tabs numbers are created.

To delete more than one video at once, click the **Select Multiple** button. A new options window appears:

Now, you may click tabs to place X's on them to mark them for deletion. To un-select a tab and remove its X, click the tab again. You may select tabs from any combination of bins. A counter displays the number of tabs that will be deleted. To prevent

inadvertent deletion of valuable model tabs, use of the **Select All** button to select all tabs in a bin is limited to use on the **Current** bin only.

Click the **Reset** button to instantly un-select all tabs and return to the single-tab deletion mode. Click the **Review** button the display a slideshow of all selected tabs. As with a single tab, to proceed with the deletion of multiple tabs, click the **Delete** button on this window. To close the window without deleting, click **Cancel**.

Once a video has been deleted, it can not be restored. Please take the time to review the videos you select before deleting them.

Move

Open a video, and then click the **Move** button to show this window:

Click the name of the bin where you would like to move the current video. If you are an Academy instructor, and your current student has a valid email address, you may choose to "move" swings (of 10 second duration or less) to his Academy locker by selecting the Academy bin icon. Click **Move** to continue, or **Cancel** to close the window without moving.

Note: when tabs are moved, there will be "holes" left in the bin where the tabs once were. When new videos are recorded or moved to the bin, these holes will be used first before new tabs numbers are created. An exception occurs when tabs are moved to the same bin they are already in. When this happens, any holes in the bin are filled beginning from the lowest numbers first.

To move more than one video at once, click the **Select Multiple** button. A new options window appears:

Now, you may click tabs to place X's on them to mark them for moving. To un-select a tab and remove its X, click the tab again. You may select tabs from any combination of bins. A counter displays the number of tabs that will be moved. Unlike the case with the **Delete** button, the **Select All** button may be used in any bin.

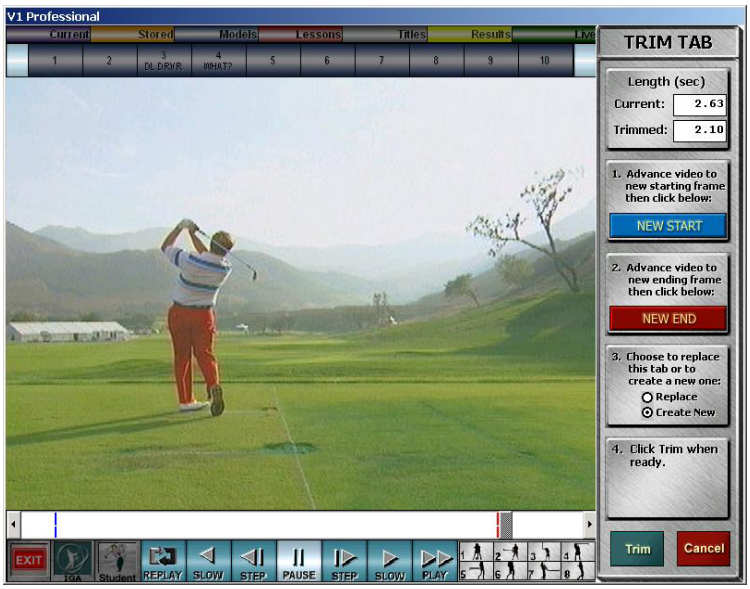
Click the **Reset** button to instantly un-select all tabs and return to the single-tab move mode. Click the **Review** button the display a slideshow of all selected tabs. As with a

single tab, to proceed with the move of multiple tabs, click the **Move** button on this window. To close the window without moving, click **Cancel**.

When tabs are moved to or from your system's hard drive and a removable disk (such as a re-writable CD or floppy disk), the original tab is not removed. Instead, a copy is made. In the case of a multiple tab move where the destination bin runs out of space, an error message will be displayed, and the yet un-moved tabs will remain selected. This allows you the opportunity to insert an additional removable disk to continue the move operation on the remaining tabs.

Trim

The **Trim** function allows you to shorten a video to conserve hard drive space, or to make a full or partial copy of a video into a new tab on your system's hard drive. Open a video, and then click the **Trim** button to show this window:



The Trim Tab window shows the original and the new file duration (in seconds). You will notice that on the video position slider there are vertical blue and red lines. These represent the new beginning and the new ending video positions respectively.

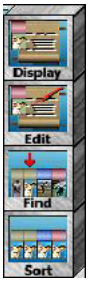
To reset either the beginning or the ending position, first move the video position using the slider or any of the other Digital VCR controls. Then click either the **New Start** or the **New End** button as appropriate. You are free to reset either of these positions as many times as is required. In the sample shown above, video before the address and after the follow-through positions is ready to be trimmed off, reducing the size of the video from 2.63 seconds to 2.10 seconds.

Finally, you have the option either creating a new tab (a "copy" of the section of the video you've selected), or replacing the video in the existing tab.

Click **Trim** to proceed with the operation, or click **Cancel** to close the window without trimming the video.

Video Information Database

The V1 is capable of storing a great deal of descriptive information with each video. Information ranges from the date and student's name to the camera angles and the type of club used. This information can be displayed, edited, and in some cases also used to search for videos on your system or those networked with you. Click the **Swing Info** button to display the following menu:



The **Display** and **Edit** buttons each open a window containing all of a video's information. The **Display** function, however, opens the window as "read-only"—information may not be changed. Here's the **Edit** display:

While in this view, a miniature video preview appears in the upper right, together with an abbreviated set of Digital VCR tools. With the **Edit** function, a miniature keyboard appears at the bottom of the window to allow you to enter information without ever using the computer's keyboard.

The information "fields" available to you are as follows:

Top of the Form

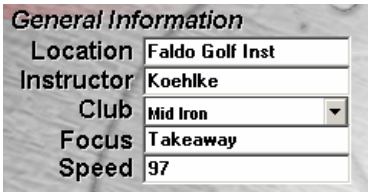
Tab ID

You assign an 8 character ID to the video. The **Move** function prompts for this field.

Name
The current student's name is entered here automatically when a video is recorded. In other words, you need to **Enroll** a student and make him the **Current Student** before you record in order for the name to be automatically associated with a video.

Date
Date the video was recorded, entered automatically by the V1.

General Information



Location
When using multiple sites, this field can be used to contain the location that the lesson occurred and/or where the swing was recorded.

Instructor
The instructor who worked with the student

Club
Identifies the club used by the student. Click the down-arrow to select from the following pull-down options: Driver, Wood, Long Iron, Mid Iron, or Short Iron

Focus
Lesson topic, for example, "What swing element were you working on with the student when this video was recorded?"

Club Speed
Estimated or actual speed at impact

Tempo

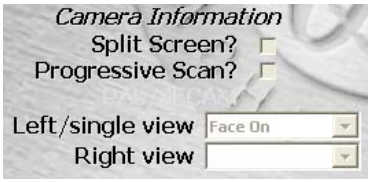
These values are calculated by the software once the impact point is set. They are adjusted automatically when you fine-tune the video's key **Swing Positions**. The three tempo values represent the following:

- Amount of time, in seconds, from "take-away" to the top of the backswing

- Amount of time, in seconds, from the start of the downswing to impact

- Amount of time, in seconds, from impact to the end of the "follow-through"

Camera Information



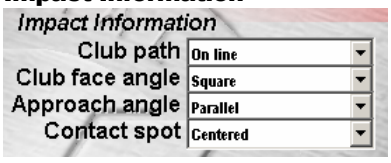
Split Screen?
A checkmark appears if the video is recorded as a split-screen using simultaneous views of the golfer from two different cameras. This applies only to systems using an external digital video mixer.

Progressive Scan?
A checkmark appears if the swing was recorded with a high-definition progressive-scan camera. This setting is automatically inherited from the P-Scan settings on the **Software Options** screen as discussed in the *More Software Options* chapter.

Left/single view
The camera view used for the video, or the left side of the video in the case of a split-screen. Click the down-arrow to select from the following: Face-On, Down-the-Line, Overhead, Back, or Other. This setting is automatically inherited from the camera view settings on the **Software Options** screen as discussed in the *More Software Options* chapter.

Right view
The camera view that captured the right side of a split-screen. Click the down-arrow to select from the following: Face-On, Down-the-Line, Overhead, Back, Other, or None.

Impact Information



Club Path
What path was the club traveling through the ball relative to the intended line of flight? Click the down-arrow to select from the pull-down options: Outside In, On Line, or Inside Out.

Club Face Angle
What horizontal angle was the clubface when it struck the ball, relative to the intended line of flight? Click the down-arrow to select from the pull-down options: Open, Square, or Closed.

Approach Angle
What vertical direction (relative to the ground) was the club traveling when it struck the ball? Click the down-arrow to select from the pull-down options: Downward, Parallel, or Upward.

Contact Spot
Where on the clubface did the ball strike? Click the down-arrow to select from the pull-down options: Centered, Heel, Toe, Top, or Bottom.

Ball Flight Information

Distance
How far did the ball travel? Enter a number (you decide meters or yards)

Launch Angle
At what angle from the ground did the ball "take off?" This information can be obtained using the angle drawing tool one frame after impact.

Trajectory
What was the height of this shot relative to what is normal for this club? Click the down-arrow to select from the pull-down options: High, Medium, or Low.

Direction
What direction relative to the intended line of flight did this shot take? Click the down-arrow to select from the pull-down options: Pull (Left), Straight, or Push (Right).

Vertical spin
What was the vertical change the ball made relative to its initial course? Click the down-arrow to select from the pull-down options: Rising (Backspin), Level (No Change), or Dropping (Topspin)

Horizontal spin
What was the left/right change in direction the ball made from its original path? Click the down-arrow to select from the pull-down options: Hook (Left), Straight, or Slice (Right).

Notes & Comments

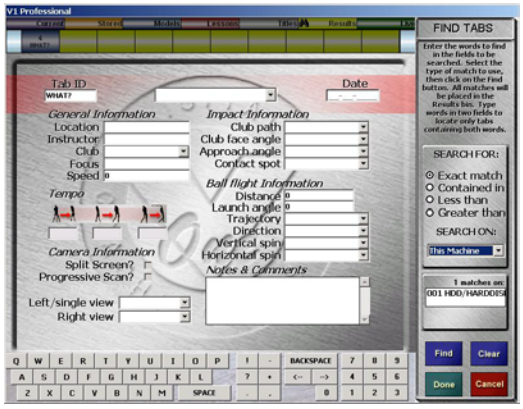
You can enter comments or any other additional information you wish to store with a swing. Such comments might include:

- Reactions
- What the student was working on
- What problems you saw that you would like to address

The first line of Notes & Comments will appear along with video information when you bring up a student's information screen.

Finding Tabs

The **Find** function helps you to quickly locate stored videos. Here's the window that opens to assist with the **Find** function.



The **Find** function uses a "query by example" search. That is, you enter data into the field or fields for which you would like to find a match. There are four ways in which to match:

1. **Exact Match** – must be the only entry in a field. Entering "John Smith" will find only "John Smith."

2. **Contained in** – text may be found anywhere in the field. Entering "John" will find "John Smith," "Bill Johnston," and "Sam Ajohneau."

3. **Less than** – the field must be an exact match, or precede your text alphabetically. Entering "John" will find "Bob" and "John" but will not find "John Smith" or "Larry."

4. **Greater than** – the field must be an exact match, or follow your text alphabetically. Entering "John" will find "John Smith" and "Larry" but it will not find "Bob" or "Jo."

Once you've entered text into one or more fields, click the **Find** button to search all bins and removable media. Once the V1 has completed its search, matched tabs are placed in the **Results** bin. (Note that in the **Results** bin, each tab retains its original Tab ID and bin color).

The **Find** function will also return results for removable media that have been used with your V1. Here's an example of a **Find** for tabs with "G" in the Tab ID:

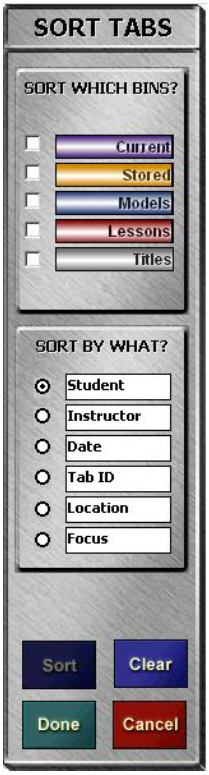
Notice the **Results** bin has a binoculars icon when it holds search results. If videos are not on the V1's hard drive, the removable media's volume name is displayed at the top of the tab. This example shows three tabs in the **Results** bin. The first is on a removable volume entitled "Peer1," and is tab number 57 from the **Lessons** bin on that volume. The second is on a CD volume entitled "TestCD" and is tab number 9 in the **Models** bin. The third tab is on the V1's hard drive, and is number 20 in the **Current** bin.

If you attempt to open a video which is contained on a removable volume, and that disc is not currently in the system, you will be prompted to insert the correct disc.

If your V1 is connected to a network (LAN), the **Find** function gives you the ability to search any particular machine. Only one V1 database may be searched at a time.

Sorting Tabs

The **Sort** function arranges tabs in one or more bins according to your choice of index. When you click the **Sort** button, a window appears:



Click the checkmark box next to the bin or bins you wish to sort.

Click the radio button next to the field you wish to use as an index. Available indexes are the following:

- Student name
- Instructor name
- Date
- Tab ID
- Location
- Focus

Click the **Sort** button. The tabs in the bins you selected will be displayed in ascending order based on the index you selected. If you change your mind, change parameters and click the **Sort** button again. Use of the **Clear** button is optional.

When you are satisfied with the sort, click the **Done** button. Click the **Cancel** button to close the window and revert to the previous sorting method (if any).

When you close the V1 software and restart, tabs may or may not be sorted as you left them, according to a software option. See the *More Software Options* chapter for details.

Removable Media

The V1 supports the use of CD's; removable discs such as Iomega Zip® and Jaz®; and removable hard drives such as the Peerless®. Each of these discs may have its own **Stored**, **Models**, **Lessons**, and **Titles** bin.

How to access a removable disc:

1. Insert the disc.

2. Hold down one of the bin labels until a list of media tabs is displayed. Media tabs have icons which designate the type of media. Discs which have not yet been initialized for use with the V1 will have names of "?."

3. When you move the cursor over one of the media tabs, a media information window will be displayed. Here you will see the type of media, the disc size, used space, and free space.

4. Click a media tab to open the selected bin on the disc. If the disc has been initialized for use with the V1, the bin will now have an icon showing that it now represents the removable disc's bin, and the tabs belonging to that bin will be displayed.

5. Open and use these videos as you would the ones on your local hard drive. Be aware, however, that the majority of removable media drives will be unable to play the videos at full speed with optimal quality.

6. You may use the **Move** function to copy videos to your local hard drive or to other removable drives.

How to initialize a new removable disc for use with the V1:

1. Click the tab containing the "?."

2. You will be asked to enter a volume name for the new disc. This name will appear on the media tab, and will be used when searching for videos.

3. The list of media tabs will now contain the name you just selected.

How to copy videos from a models CD:

1. Insert the CD.

2. Locate the model videos by following the "How to Access a Removable Disc" instructions. Typically, they are found in the **Stored** bin on the CD. This allows you to easily **Move** them to your hard drive's **Models** bin.

3. Click the **Move** button, and click **Select Multiple**.

4. Click **Select All** or select the videos you want to move on a tab-by-tab basis.

5. Select your destination as your **Models** bin.

6. Click **Move**.

How to use a Re-Writable CD drive (CD-RW) with your V1:

1. Obtain and install the appropriate CD-RW software for your operating system and CD drive. We recommend the Roxio® product.

2. Follow the instructions on how to access and initialize a removable disc for use with the V1. You may use any of the V1's bins for the CD-RW disc.

3. A CD-RW's bin label will be the CD icon with the letter 'R' superimposed.

4. Use the **Move** command to copy video to the CD-RW bin.

5. When you remove the CD, your CD-RW software should prompt you to "finalize" the disc. It should now be usable on other PC's.

How to remove a removable disc from the V1's database:

The **Find** command will match tabs from all removable discs that have ever been used on your system. At some point, you may wish to "clean house" by removing the discs that you no longer use from your V1 database. Follow these steps:

1. Use the **Find** command.

2. In the "Found on" box, double-click the volume or disc you want to remove.

3. Click the **Remove** button.

4. Click **OK** when asked to verify that you are sure.

Importing Video

There are a couple of easy ways to import pre-recorded video into the V1.

First, you can import video directly from a VCR. Attach a VCR to your video capture device, play a tape, and then use the V1's **Record** functions. Recording from a VCR, you may either (1) record in **Continual** mode and then later use the **Trim** function, or (2) record in **Multiple No-Replay** mode, and manually trigger the impact points by clicking on the video at the appropriate times.

There is also a way to bring pre-recorded video files into the V1. In your hard drive's Video folder, create a subfolder with the name "Titles." Use your Windows® "My Computer" interface to copy video files (only those files ending with .AVI) into this new folder. If you are able to open and view these files in your Windows® Media Player®, the V1 is likely able to work with them as well. When you next start the V1, these videos should be automatically assigned to tabs in the **Titles** bin. You may then move them to other bins as necessary.

Networking

The V1 has the ability to share video with other V1s via a network. Any V1 should be able to "see" the other V1s on the Intranet (Local Area Network or LAN) if the system meets these criteria:

- Each machine must have installed the **Client for Microsoft Networks**, **File and Printer Sharing for Microsoft Networks**, and the **Microsoft® NetBUI protocol** (pre-XP versions of Windows only).
- Each machine must have a workgroup name of "V1".
- Each machine must have a unique machine name.
- Each machine must share the C drive as "C" with full read/write privileges.
- Each machine must share the V1's program folder as "V1". By default, this is the "C:\V1_50" folder.
- Each machine must be using V1 version 5.0.

The easiest way to test your configuration is through the Windows "My Network Places" icon. If you're using Windows XP, click the "View workgroup computers" task, and then use the **Up** icon. You should now have a window that's browsing the "Microsoft Windows Network." In this window you should see an icon labeled "V1" which represents the V1 workgroup. When you open V1, you should see an icon for

each machine in your V1 network. When you open each machine, you should see a "C" icon (representing the C drive) and a "V1" icon (representing your V1 program folder).

Now, to access video on another V1, follow the instructions for "accessing a removable disc" in a preceding section. Other V1s on the network will appear as tabs. Here's an example of what you might see when holding down the **Stored** bin button:

In this example, the remote V1's machine name is "CD-Burner."

Please contact a networking professional directly if you require further assistance configuring your Intranet for use with the V1.

Chapter 5

Digital Illustration

Using the V1's suite of analytical drawing tools

The Drawing Tools section contains buttons that allow you to draw reference lines and shapes on top of the video.

Line, **Box**, **Circle** and **Angle** each have several variations that will "pop out" if you click and hold them down or use the right mouse button. Note: menus may be made to pop-up instantly if you enable the feature as described in the *More Software Options* chapter.

How to Draw

Select the drawing tool that you wish to use. Move the cursor to the video window. Click the left mouse button, and drag the mouse in any direction. Once you have moved the mouse so that the object is the desired size and at the desired location, release the button. The temporary object will be redrawn in the color and the line thickness currently selected.

If you're using a tablet and pen, pressing the pen firmly down onto the tablet is equivalent to using the mouse's left button.

Lines

The **Free** and **Spline** line tools have their own buttons. The other line tools, however, share one button. To change among the **Vertical**, **Horizontal**, and **Diagonal** line tools, hold down the button that's currently displayed to reveal a menu.

Free: draws freehand, just like using a pencil. Each time you press the mouse button (or push down on the pen), you begin a new line.

Spline: automatically draws a smooth curve between the points you click, in the order that you click them. When drawing a spline, you may click on the video to add new points, or click and drag the white rectangles that designate existing points. Only one spline may exist per video. If a spline already exists when

you click the **Spline** button, it is "brought forward" to be edited. To remove it and start over, click the **Undo** button.

Vertical: constrains the line you draw to be straight up and down.

Horizontal: constrains the line you draw to be level.

Diagonal: lets you draw a line at any angle you want. Whether or not the angle measurement persists on the screen is determined by a software option.

Angles

The angle tools share a single button. To switch between these tools, hold down the angle tool button that is currently displayed.

Variable: allows you to draw an angle of any degree. Position the cursor at one of the endpoints of the angle. Click and draw the first leg of the angle toward the apex (corner). Release the button and reposition the cursor at the other endpoint. Now when you click and draw, an angle measurement will appear. Release the mouse button to complete the angle.

Right: only right angles are drawn. Begin at the apex (corner), then click and draw in the direction of one of the endpoints.

Posture: draws posture angles, which are comprised of three lines with angle measurements at the hip and knees. To draw a posture angle, click and draw a line from the shoulders to the hips. Then, click the knees and then finally the ankles.

Boxes

The box tools share a single button. To switch between these tools, hold down the box tool button that is currently displayed.

Rectangle: draws a shape with four sides and four right angles. Click at one corner, and then draw to the opposite corner.

Box: draws a perfect square. Click at the center of the square, and then draw "outward" in any direction.

Grid: draws a grid—a series of overlapping horizontal and vertical lines. The size of the grid squares will vary with the current line width setting. The

thicker the lines, the bigger the grid squares.

Circles

The circle tools share a single button. To switch between these tools, hold down the circle tool button that is currently displayed.

Circle: draws a perfect circle. Click at the center of the circle, and then draw "outward" in any direction.

Oval: draws an ellipse. Click at one corner, and then draw to the opposite corner of the rectangle that surrounds the oval.

Clock: draws a clock circle with "hour" ticks. Click at the center of the clock, and then draw "outward" in any direction.

Text

The **Text** button allows you to write text on top of the video in the current color. The V1 will memorize phrases that you use frequently. Click the **Text** button to open the following window:

To use the Text tool:

Click then type into any empty phrase box, or click and edit any of the existing phrases. Click a phrase's "radio button" (the circle to the left of the phrase) to use any memorized phrase.

Check and adjust the text size, alignment and shadow options as necessary.

Move the cursor over the video window, and use the left mouse button. When you lift up or release the mouse button, the text will be drawn.

You may repeat the above procedures in order to draw as many phrases as you wish.

When you are done, click **Done** to memorize the phrases.

Click **Cancel** to close the **Text** window without saving any changes you made to the "memorized phrases" boxes.

Erasing

Here are a set of tools for removing drawings from the screen.

Removes the last thing you drew. You have up to 99 "levels of undo," where you can undo up to 99 drawn objects in the order that you drew them.

When you use the **Undo** button, the button will split into two parts: **Undo** and **Redo**. Each time you click **Undo**, the system will remove another drawn object from the screen, proceeding in order from most recent back. Clicking **Redo** will bring the most recently undone object back again. If you **Undo** something, then draw something new, the new drawing replaces the original drawing.

The **Clear** button removes all drawing from the video screen. **Clear** may also be un-done and re-done with the **Undo** and **Redo** functions.

To use the **Erase** tool, you may use either the right mouse button (except with the **Slide** tool), or the flip-side of a drawing tablet pen.

Snapshot

The **Snapshot** button saves what you've drawn on a video. When you next open the video, the drawing you saved will be recalled automatically. The **Undo** and **Redo** commands work with the recalled drawing.

It's possible to use snapshot with a "clear" video. When you next open the video, any drawing will be removed.

If you open a video which has not yet had the **Snapshot** tool used on it, any drawing currently on the video window will remain.

Line Styles

The selected button determines the width (or thickness) of the pen used by the majority of drawing tools.

Use these buttons to choose whether or not one or two arrowheads are added to the ends of your lines and angles.

The selected button determines the color of the pen used by the majority of drawing tools. If your mouse or pen has a third or "middle" button, it may be used to cycle through the color palette.

Chapter 6

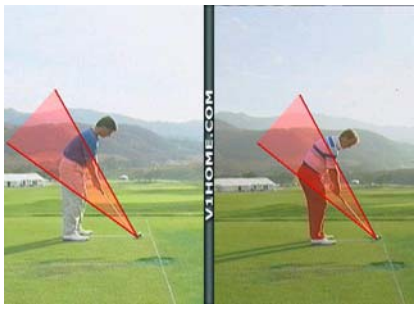
Digital Effects

The magic begins…

With this chapter and the next you will see some of the many advantages and the flexibility that the realm of digital video affords.

Swing Plane

Overlays a half-transparent swing plane triangle on a student to assist you in determining if a club moves in or out of plane during the golf swing. Here's an example:



Each video may have one swing plane drawn at a time—when a new swing plane is drawn, it replaces one that may already be on the screen.

Although the swing plane resembles the variable **Angle** tool, it is drawn differently. To draw a swing plane, click first at the *apex* (corner) of the angle. Move to draw the first leg of the angle through either the shoulders or the hips. Next, click in the vicinity of the opposite endpoint, and move to draw the other leg.

The V1 automatically remembers the last swing plane that was drawn for each video, and instantly recalls it when you click the **Swing Plane** button.

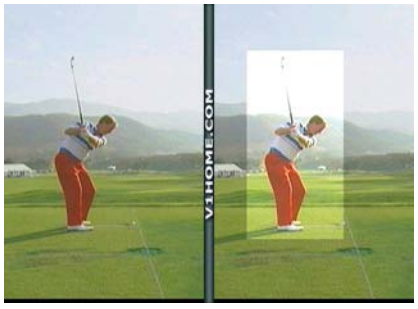
Magnify

This tool is used to show a close-up view of a section of the current video image. This tool behaves like one of the digital illustration tools. When you click the **Magnify** button, the cursor becomes a magnifying glass. Move the cursor over the video, then click and hold the mouse button to display a "window within a window" magnified view. While holding the button down, you may move the mouse and the magnification window will follow.

The magnification window is intentionally "offset" slightly up and to the left to prevent the cursor from obscuring the intended center point of interest. Here's an example:

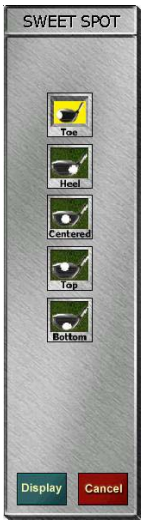
Enhance

This tools allows you to brighten any rectangular section of the video image for emphasis or better contrast. Like **Magnify**, **Enhance** also behaves like a drawing tool. The **Enhance** tool draws a rectangle, but when you release the mouse button to finalize your drawing, the video within the rectangle is enhanced. Here's an example:



Ball Flight Animations

The V1 ships with 23 animated videos which depict various aspects of ball flight based on several parameters, including club path, impact angle, launch angle, club loft, and sweet spot. When you click the **Animations** button, a menu appears which allows you to select one of three categories of ball flight animations.



Choose the parameter or combination of parameters corresponding to the animation that you wish to view, and then click the **Display** button. The animation is opened in the V1's video window just like one of your recorded videos, and you can perform the same analysis and comparison using these animations as you would with your own videos.

Tempo

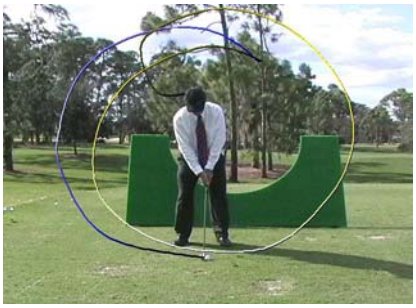
When **Tempo** is turned on, a digital readout will appear in the upper-right corner of the video.

The number displayed here represents the time (in minutes, seconds, and hundredths of a second) elapsed since the "address" swing position. Therefore, in order for the tempo feature to operate effectively, you should accurately set the address position for your videos. The address position is practically defined as the point in time at which the club begins to move at the beginning of the backswing.

You will see negative numbers here if your video includes the golfer's preparation or "waggle" time before the swing actually begins.

Trace

This tool allows you to draw a continuous arc (a Bezier curve) through the club path, or any moving object in the video. For a golf swing, you may choose to target the backswing and the downswing together or separately. The line may be shaded to better visualize the varying speed of the club head through the swing. Here's a completed example using the color blue for the backswing and the color yellow for the downswing:



Before using **Trace**, you must first set both the impact point and the top-of-backswing swing positions. For best results, you should also manually set the address position. Instructions for doing this may be found in the *Video Playback* chapter.

When you click **Trace**, a window opens to guide you through the process.

TRACE PATH
Trace Options
Vary color depth with speed
Save trace with tab
Backswing
Downswing
Make changes above as necessary.
Once you click on "Begin Trace," the system will ask you to click on the club head in a series of frames.
Begin
Done
Cancel

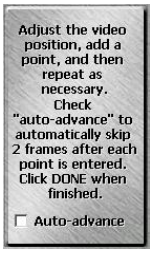
Check **Vary color depth with speed** if you want to see the trace color become brighter as the speed increases and become darker when the speed decreases.

Check **Save trace with tab** if you want the V1 to automatically recall the trace when you open the video and click **Trace** in the future.

Select either the **Backswing** or the **Downswing**, or both.

Select the colors that you would like to use by clicking on them.

Click **Begin** when you are ready to begin drawing the trace. The window will change to show this text:


Adjust the video position, add a point, and then repeat as necessary.
Check "auto-advance" to automatically skip 2 frames after each point is entered.
Click DONE when finished.
Auto-advance

You should first experiment with drawing a trace without checking the auto-advance feature. In this way, you actually have more control over the placement of the trace points. It will only take about 8 points to represent a backswing, and 15 to represent a downswing.

To draw a backswing trace:

1. Move the video to the address position if it's not already there.

2. Click on the club head. A small green square will appear where you click.

3. Advance the video until the club is at about the "7 o'clock" position and again click on the club head. This time a line will be drawn connecting the squares.

4. Repeat the process of advancing and clicking. The V1 automatically curves the line to draw a smooth line through your points, so it's not necessary to click on every frame. You will actually get the best results by leaving some distance between squares.

5. If you're tracing the downswing path as well, continue advancing and clicking to the follow-through position.

6. It is possible also to "reverse" the video in order to add points that you missed or to move squares that you've already drawn.

7. Click the **Done** button when you're finished adding points.

Here's an example showing the green squares after using about 25 clicks:

Once you've clicked **Done**, you have another opportunity to edit your trace. This time, you may click anywhere on the trace line, and the V1 will attempt to automatically move the video position to the nearest point, and add a square. If you click an existing square, the video position is adjusted, and you then may "drag" the square to a new position. If you want to remove a square (perhaps to smooth-out the line), right-click it, or use the pen's "eraser" end if you're using a pen and tablet. Click **Done** once more to finalize your drawing.

If you chose the option to save the trace with the video, you may click the **Trace** button again to edit the trace that's already on your screen, or to draw a new one.

Flip

This feature allows you to better compare left-handed players with right-handed players. Open a video and then click the **Flip** button to engage this feature. Click again to turn it off.

Printing

If you have a printer attached to your system, the V1 allows you to reproduce on paper what you see in the video window. An options window appears:

Choose the paper size, orientation, and logo position, and then click **Print** to begin printing. Note that if you have not used the Windows® control panel to choose a default printer, or if you wish to print to a printer other than your default printer, you should also check the **Advanced Opts** box in order to be presented with the standard Windows® "print dialog" box. You may also use this option to override other default printer settings, such as quality, paper tray, etc.

The four paper size choices are Photo, Letter, Poster, and Default. The first three are standard sizes. The "default" paper size will attempt to use whatever paper size that you have configured for your default printer in the Windows® control panel.

If you have a logo that you would like printed along with the video image, you should save it as "logo.bmp" in the V1's program folder (by default, this is C:\V1_50). This file should be in standard Windows® 24-bit color "bitmap image" format. Note that the pure color black (RGB(0,0,0)) will be interpreted as the "transparent" color. You have a choice of 6 positions on the paper at which to display your logo—check the box corresponding to your selection in the "logo position" box.

Chapter 7

Advanced Digital Effects

Now things really start to get interesting…

The features described in this chapter were designed to aid you in viewing your video from alternate perspectives. The **Time-Lapse** features, for example, use various techniques to compress multiple frames of video into a single image.

Time-Lapse / Key Frames

Click and hold the **Time-Lapse**, **Key Frames**, or **Multi Exp** button to open the following menu:

The V1 will remember the time-lapse feature you used most recently. To re-use the same time-lapse feature, just click the button that's displayed. To pick another time-lapse feature, click and hold the button you see.

The basic time-lapse function simply displays four consecutive frames of video on one image. Here's an example:

The second button, **Key Frames**, will display the 4 or 8 key frame positions corresponding to the 4 or 8 **Swing Position** buttons as discussed in the *Video Playback* chapter. Here's an example:

Notice that the **Tempo** feature is supported with **Time-Lapse**.

Multiple Exposure

This advanced digital effect simulates the photographic effect of exposing one frame of film to multiple images. In the V1, this effect is performed on sequential frames of video, providing a powerful way to compress an entire athletic movement into a single image. If not already visible, the **Multiple Exposure** button can be found by holding down the **Time-Lapse** or **Key Frames** button until a menu appears. Here's an example image:

Before a multiple-exposure image can be generated, you must specify the Impact Point for your video. Then, you may select a starting and an ending **Swing Position** for the effect. The V1 will remember these positions and make them the defaults for the next time that you use this feature.

You will find that this effect works best when the camera is stationary, as with a tripod. Otherwise, the entire frame will appear as movement to the computer rather than the subject alone.

Overlay

Begin in Compare Mode with two similarly recorded videos. When you click the **Overlay** button in the Digital Effects frame, the videos will appear blended together.

It will still be possible to change each video's position by using the sliders and the **Swing Position** buttons. You may also **Step** or use **Slow** motion on one or both videos.

The **Slide** tool in the Digital Effects frame may be used to fine-tune the alignment of your videos. The "right-hand side" video will move, while the "left-hand side" video will remain stationary.

Note: this feature is not available in demonstration mode. Also, when not in Compare Mode (that is, only a single swing is open), the **Overlay** button performs the Live Video Overlay feature.

Live Video Overlay

With a single video open (that is, when not in Compare Mode), the V1 will attempt to blend live video from your camera(s) with video from the open movie.

This feature is only available when using DirectShow or dual-camera DirectShow capture drivers. It is no longer available for "Legacy VfW" capture devices. See the *Video Recording* chapter for more information on choosing a capture device and driver.

All Digial VCR controls are available with the exception of **Play**. Other tools not available in conjunction with Live Video Overlay include **Time-Lapse** and **Magnify**.

Slide

When using Compare Mode, only half of the normal space on your screen is available for each movie, and one subject may appear larger than the other. The **Slide** tool allows you to "pan and zoom" a movie in order to position it for better viewing.

After selecting the **Slide** tool, use the mouse to "grab" the video you wish to move. When you depress the left mouse button (or push down with a pen), you will grab the video, and the mouse cursor will change from an open hand to a closed hand. Once you "grab" the video, moving the mouse will move the video in the same direction. When the video is positioned as you like, release the mouse button. If you reach the video's border while moving the video, it may be necessary to reposition the mouse and then repeat use of the **Slide** tool.

Use the right mouse button instead of the left to "zoom" the video. When you hold the right mouse button, the cursor will become a double-headed arrow. Move the mouse toward you (or down) to zoom in. Move the mouse away from you (or up) to zoom out.

Slide may be used both in Compare Mode and with a single swing.

Chapter 8

Working with Students

Keeping your business organized

The V1 helps you to do business by maintaining a database of your students, their contact information and other lesson related data. From a student's record, you can instantly jump to any of the student's videos that are stored on your system. Each time you begin work with a new student, you should **Enroll** the student if necessary, and then select him as the **Current Student**.

Student Information

When you click the **Student** button, a window appears which allows you to search for a student, view of a list of his videos, and then select him as the **Current Student**. It's also the place to enroll new students.

The information displayed is read-only until you click either the **Edit** or **Enroll** button.

The information "fields" available to you are as follows:

Contact Information

Student Name
The student's name appears on the top of the form, and is the "key" to the database. That is, no two students may share the same name. If two of your students do share names, it may be necessary to use abbreviations for one, or to add additional information to the name field, such as year of birth. It's up to you as to whether you prefer to use first name followed by last name, or last-name-first.

Address1
Street number and name

Address2
Suite or apartment number, if applicable

City

State/Province

Postal Code
Zip code in the USA

Country

Phone

Email
user@domain.com, for example

Vital Statistics

Age
Enter a numerical value in years

Height
Numerical (inches or meters), or general (short or tall)

Sex
Gender, M or F

Total Visits
The number of times a student has been selected as the **Current Student**. This number is automatically incremented by the V1.

HCP
Current USGA handicap

Body Type
Endomorph (overweight), Ectomorph (thin), or Mesomorph (muscular)

Notes
Holds any other useful information. This can include swing flaws, strengths, learning style, etc.

Swing History

Date
When a swing was recorded

Instructor
The name of the instructor that worked with the student at this lesson

Notes
Instructor's notes on what the student was working on with each lesson

SwingID
The ID assigned to each swing tab. The V1 prompts you to enter ID's for swings when using the Move function. You may also manually assign them by using the Video Information Database functions.

Note: You may quickly open a video in the Swing History by double-clicking it.

Locating a Student

The list of students is stored alphabetically. When you begin entering students, it is up to you whether you prefer to store them last-name-first (Jones, Bob), or first-name-first (Bob Jones).

You may use the mouse to scroll through the list of students, and then click the one you are looking for. When you click a student's name, his information is displayed on the student form.

If you choose to use the keyboard instead, you may enter the student's name in the box above the list of students. As you enter letters, the list of students is automatically scrolled to the appropriate position. When you've entered a couple of letters manually, you may then be able to use the mouse to make a final selection.

The Current Student

Once you've found a student, click the **Select** button the make him the **Current Student**. When new videos are recorded, they are automatically attributed to the **Current Student**.

If you double-click a student's name in the student list, that student is automatically selected as the **Current Student** without having to click the **Select** button.

Enrolling a New Student

To enroll a new student, you must enter his or her full name into the box above the list of students. It is up to you whether you prefer to organize your students last-name-first (Jones, Bob), or first-name-first (Bob Jones), but once you've selected one convention, you will want to stick with it.

To enroll a student:

1. Enter the name in the box above the list of students. The V1 will automatically capitalize the first character of each word in a name, unless you type it in differently using the computer's keyboard.

2. Click the **Enroll** button.

3. Use the mouse to move the cursor to one of the information field boxes and click.

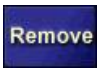
4. Enter the information.

5. Move to other fields and enter additional information as necessary. You always have the option of returning to this screen to add or edit the information at a later time.

6. Click the **Save** button to add the new student to the student list. Or, click **Cancel** to terminate the enrollment process without adding a new student.

Editing a Student

After locating an existing student, you have these options:



Click the **Remove** button to permanently delete all of a student's information. The V1 will ask for confirmation before removing the student.

You have the option of also deleting all of the student's videos. Please use extreme caution when selecting this option!

Click the **Edit** button to change the information that was entered into any field. Note: the Name may not be edited—if you need to change the student's name, you will need to enroll a new student, and then remove the original student.

To edit a student's information:

1. Locate the student and click the **Edit** button.

2. Use the mouse to move the cursor to one of the information field boxes and click.

3. Change the existing information or enter new information.

4. Move to other fields and enter additional information as necessary.

5. Click the **Done** button to make your changes permanent. Click the **Cancel** button to stop editing the student—you will lose any changes you made to that student's record.

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Chapter 9

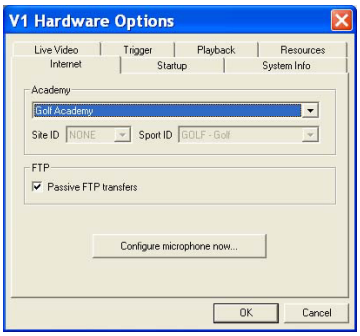
The Internet Academies

Distance learning here and now

The Internet Golf Academy (and the Internet Sports Academy) connect golf professionals like you with their students anywhere in the world. Students use their personal computers, cameras, and the V1 Golf or V1 Home Edition software to capture their motion. You receive an email notification when a student uploads his swing and is requesting an analysis. You download the video and analyze it using all of the V1's tools. Your video lesson including voice is then returned to the student.

Internet Options

By default, the V1 uses the Internet Golf Academy website. If you're going to be using the Internet Sports Academy website instead, you'll need to make that selection now. This page also allows you to configure your microphone for recording Internet lessons. To access the Internet Options window, start the V1, select **Options**, and then click **Hardware Options**. Select the **Internet** tab. The following window will appear:



Fill-out a Faculty Application online at www.internetgolfacademy.com, or contact Interactive Frontiers directly in order to have an Academy instructor account created for you on either the Internet Golf Academy or Internet Sports Academy website. Insure that the proper Academy is selected on this page. When using the Internet Sports Academy, you may also select a "Site ID" and a "Sport ID." These determine

3rd party website affiliations and default sport if you are teaching something other than golf.

The **Passive FTP transfers** option should be checked by default. This feature aids in file transfer through systems with gateways and firewalls. If this does not apply to your system, and you experience problems with file transfers to or from an Academy website, you might try disabling the passive FTP feature.

Configuring your Microphone

Before using an Academy to create an Internet lesson, you must configure your microphone. This insures that it is properly connected, selected, and that the gain (recording volume) is properly set. A quick record/playback test is also performed. To begin the configuration, click the **Configure Microphone Now** button.

V1 Audio Setup - Step 1 - Speakers
First, we must verify that your sound card and speakers are working, and that the volume is set appropriately. Insure that your sound card is selected in the box below:
YAMAHA AC-XG WDM Audio
Now, click the following button to play a test sound.
Play test sound
Adjust the volume slider if necessary:
Volume:
When you are satisfied with the sound level you hear, click Next to configure your microphone.
< Back
Next >
Cancel

There are several steps, and you may use the **Back** and **Next** buttons to navigate them. The first step asks you to check your speakers and volume. Click the **Play test sound** button to hear a sound byte. If necessary, adjust the volume slider and the controls on your physical speakers (if they are external to your PC), until you attain a comfortable sound level. Click **Next** to continue.

V1 Audio Setup - Step 2 - Microphone
Now we will configure your microphone. Insure that the sound card connected to your microphone is selected in the following box:
YAMAHA AC-XG WDM Audio
Sound cards often have several inputs. Verify that your microphone input is selected in the following box:
Microphone
Advanced users may wish to review the audio format. It is recommended that you do not change the following box from its default setting.
22.050 kHz, 16-bit mono
When you are satisfied with your selections, click Next to check and set the recording level (gain) on your microphone.
< Back
Next >
Cancel

The second step asks you to select your microphone. The first two option boxes on this page ask for you to select your sound card or other device to which your microphone is connected, and the input device if there are more than one from which to choose. The third box controls the recording format. Unless you have been

specifically instructed to change this setting, please retain the default. Click **Next** to continue.

V1 Audio Setup - Step 3 - Recording Level
The following meter represents the magnitude of the audio signal being received by the V1.
Position the microphone as you would when performing an Internet lesson. Begin speaking. As you speak, the meter will move.
Ideally, the signal should be as strong as possible without "clipping." Clipping occurs when the signal becomes too strong and can no longer be captured correctly.
Adjust the following gain control to be as high as possible without the occurrence of clipping. When clipping occurs, the meter will turn red.
Gain:
(high)
< Back
Next >
Cancel

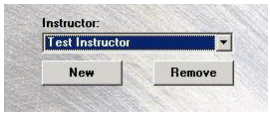
The third step asks you to adjust the gain (or recording volume) of the microphone. There's a graphic display of the sound that's currently being "heard" by the computer. You'll want to position the microphone and speak as you would when performing a lesson. The object is to set the gain as high as possible without "clipping" the audio. Clipping will create distortion in the audio. You will see the graphic display turn red when clipping occurs. When you see clipping, adjust the gain lower and speak again. When you've discovered an optimal gain setting, click **Next** to continue.

V1 Audio Setup - Step 4 - Test Record
Now you're ready to make a test recording. Click "record" to begin recording. Speak for about 10 seconds. Click "stop" when you are finished.
Record
Stop
Click "play" to listen to what you've recorded. If what you hear is not acceptable, use the "back" button to change your settings.
Play
Click "Finish" when you are satisfied with your recording.
< Back
Finish
Cancel

The final step allows you to perform an actual recording test. Click the **Record** button to begin. Speak for several seconds, and then click the **Stop** button. Click the **Play** button to hear what you've recorded. If you need to return to previous steps to make corrections, you may do so as this time by clicking the **Back** button. If you are satisfied with the sound, click **Finish** and your settings will be saved.

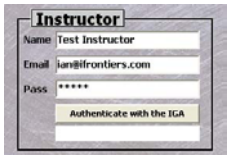
Instructor Accounts

When you launch the V1 software, or close the **Options** page, you will notice a box in which you can specify an instructor's name.



When you first install Version 5.0, this box will say "<default>." It is OK to use the V1 with this setting. However, if you wish to use an Academy to retrieve swings and to upload your lessons, you should add your Academy instructor account information into the V1 at this time.

To enter new instructor information, click **New**. You will be taken to the **Software Options** screen to complete the process.



Enter your name and then the email address and password that you use to access the Academy. When you have entered this information and your system is connected to the Internet, click the **Authenticate with the IGA** button. Your account information must be authenticated before you will be able to use the V1's Internet features. If ever you edit your account information, you must re-authenticate. Be sure to click **Done** to save your account information and authentication status.

If you experience problems authenticating, check the following:

1. You have contacted Interactive Frontiers to have your Academy account transformed into an instructor account.

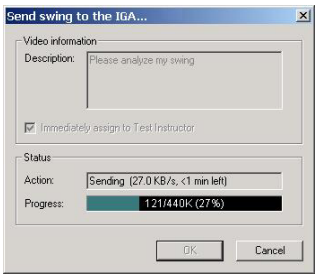
2. You have selected the proper Academy information on the **Internet Options** page.

3. You have entered the correct email address and password.

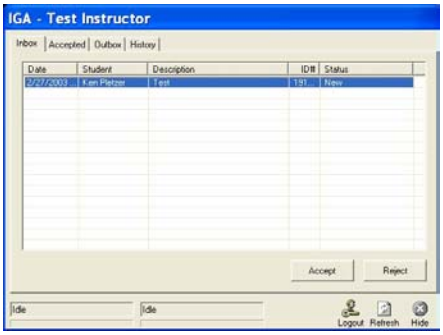
4. Your PC is currently connected to the Internet

Receiving Swings to be Analyzed

Before you can receive a swing, a student must first have a swing in his locker, and assign it to you. Either the V1 Pro, V1 Golf, or the V1 Home Edition software may be used to upload swings to student lockers. Swings may either be automatically assigned when they are uploaded, or the student may use the website to assign swings manually. Here's what a student might see when he uses V1 Golf or the V1 Home Edition to send a swing:



Once the swing is on the Academy website and assigned to you, you can use the **IGA** button to view your **Inbox** and retrieve it. You must be connected to the Internet in order to make changes to your **Inbox** and to send and receive.



Your **Inbox** contains a list of the new swings which students have assigned to you. Click a swing to highlight it, and then click either **Accept** or **Reject**. If accepted, the swing is moved to your **Accepted** page, and transfer of the file from the Academy will begin immediately if you're connected to the Internet. If rejected, this swing is moved to your **History** page. In either case, the student will be informed of your decision via email.

When you are done accepting and rejecting swings, you may now visit the **Accepted** page to "watch" your swings arrive, or click the **Hide** button to close the window. When transfer and unpacking of a swing is completed, it will be added as a tab in your **Current** bin with a Tab ID reflecting the Academy serial number. The process of importing these swings will also automatically create the appropriate new student records in your V1's database as necessary.

As an added video organization feature, swings assigned to the current instructor which require lessons are also listed in the **Results** bin. In this way, the **Results** bin acts as your Academy "to do" list. Tabs are removed from the **Results** bin when they are analyzed and moved out of the **Current** bin.

Recording an Internet Lesson

Lessons may either be performed "on-site" or performed in response to swings sent to you through the Academy. To respond to a received swing, open the swing to be analyzed, and then select the **IGA** button from the **Record** pop-

up menu. To perform an "on-site" lesson, open a student's swing (not received through the Academy) or a model swing, select your student as the **Current Student**, and then select the **IGA** button from the **Record** pop-up menu. The student must have a valid email address in his student record.

Begin your lesson immediately. Your lesson cannot exceed 10 minutes in duration. A 10 minute countdown timer will begin on the V1 window. To the right of the countdown timer is a graphical display of recorded audio activity.

The audio meter is not real-time, but if you see no movement of the display, you may not have your microphone configured correctly—please consult the previous section.

If you make a mistake, or would like to cancel the lesson for any reason, just click the **Stop** record button, and select **Cancel**.

While performing the lesson, speak naturally into the microphone, and use the V1 as you normally would to analyze and compare the student's swing. It is not possible to use live video while recording your lesson. When you are done, click the **Stop** record button. Click **Save** to package your lesson for transmission to the Academy website.

Packing and sending of the lesson is done "as a background process." That is, as soon as you click **Save**, you then may immediately use the V1 for other purposes.

Uploading your Lessons

If you are not continuously connected to the Internet, the V1 will upload lessons when the connection becomes available. When the connection is made, click the V1's **IGA** button, select the **Outbox** page, and verify that transfer begins.

As each lesson is successfully uploaded, it is moved from the **Outbox** to the **History** page.

Chapter 10

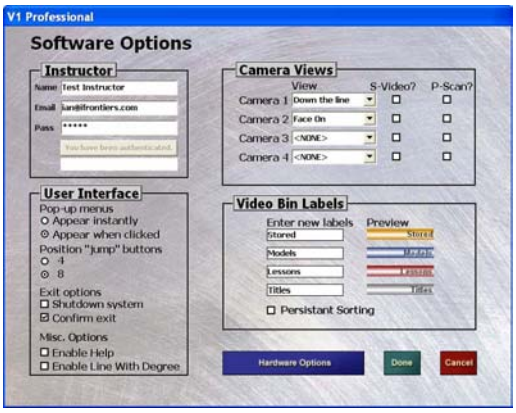
More Software Options

Further customize your V1 experience…

How do I turn off the pop-up help windows? How can I change the name of my bins? How can I tell the V1 that I would like videos recorded by my second camera to be labeled as "Face-on" shots? These and other questions are answered in this chapter.

User Interface

From the V1's opening menu, click **Options** to open the following window:



The Instructor section is discussed in the *Internet Academies* chapter.

The User Interface section contains options for pop-up menus, **Swing Position** buttons, exit options, and two additional options under the heading of "misc."

Pop-up menus contain additional tools and features. They appear when you click and hold down certain V1 buttons, or use the right mouse button instead of the left one. The **Record**, **Time-lapse**, ball flight **Animations**, and other illustration tool buttons have this behavior. If you select for these menus to **Appear instantly**, the V1 will display them as soon as you move the mouse cursor over the associated main V1 button. You might wish to try this feature if you are new to the V1 in order to expose

"hidden" features. Once you become more acquainted with the V1, however, you will likely wish to disable this feature.

You may choose to display either 4 or 8 **Swing Position** buttons as discussed in the *Video Playback* chapter. If you select to have only 4 of these displayed, they will correspond to the Address, Top-of-Backswing, Impact, and Follow Through positions. This setting also affects the behavior of the Time-Lapse "key-frames" feature—a number of key frames are displayed corresponding to the number of **Swing Position** buttons that you have selected to display.

If you select **Shutdown System**, the V1 will close all open applications on your system and attempt a power-down when you exit the V1 software. This option is handy if you are using the V1 as a dedicated Kiosk system.

If you select **Confirm Exit**, you will be asked "Are you sure?" when you click the V1's **Exit** button. If not selected, the V1 will exit immediately upon depressing the **Exit** button.

You should exercise caution when disabling the **Confirm Exit** feature and simultaneously selecting the **Shutdown System** option.

The **Enable Help** option will cause pop-up help windows to appear alongside the cursor as you move the cursor over the V1's buttons. Like the pop-up menus option, you may wish to try this option if you are new to the V1, but once you have acquired some experience with the system, you will likely wish to unselect this option.

The **Enable line with degrees** option will cause angle degree measurements (relative to the horizon) to be drawn alongside the lines that you draw. Without this option selected, the degree measurement is still displayed alongside the line until you release the mouse cursor while drawing a line and the line is finalized.

The "Video Bin Labels" section allows you to customize the names of your video bins. By default, these are **Current**, **Stored**, **Models**, **Lessons** and **Titles**. However, these may be changed as you would like. The V1 recognizes a name of "Titles" for the 5th bin as having special significance. If labeled as "Titles," clicking this bin label will cause a **Title Record** dialog to be displayed. If you wish to disable this behavior, simply re-label the bin.

The **Persistent Sorting** option, when selected, will cause the V1 to remember how you last sorted your videos as described in the *Working with Videos* chapter.

Camera Views

The majority of the information gathered in this section applies to systems using an external digital mixer.

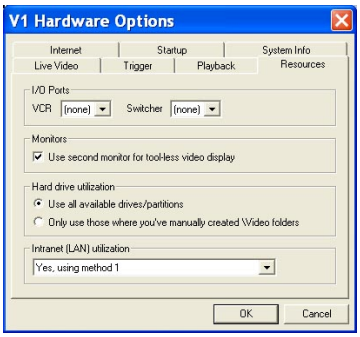
The camera angle view settings are inherited by new videos as they are recorded. You will see this information in the Video Information Database, and you may be able to search and sort using this criteria. For systems using two DirectShow cameras, Camera 1 corresponds to the image on the left side of your Live Video Preview window, and Camera 2 corresponds to image on the right side of your Live Video Preview window.

If you are using S-Video connections between your cameras and your digital mixer, you will want to check the appropriate boxes in the "S-Video" column.

If you are using "progressive scan" cameras (these are rare), you will want to check the appropriate boxes in the "P-Scan" column. Progressive scan cameras provide 30 pictures per second at a higher resolution as opposed to the normal 60 pictures per second at a standard resolution.

System Resources Options

To access the System Resources window, start the V1, select **Options**, and then click **Hardware Options**. Select the **Resources** tab. The following window will appear:



If you have an older V1 system, it may be configured for use with a computer-controlled VCR and/or digital mixer. The System Resources window is used to specify the I/O ("COM") ports used by these devices. A value of "(none)" is used to indicate that these devices are not present.

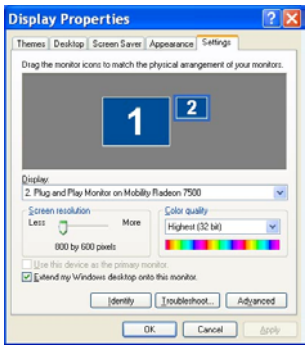
Second-Monitor Tool-less Display

Check **Use second monitor for tool-less video display** if you have a system with two monitors and you'd like to have the V1's video window displayed on your second monitor without the tools (the V1's buttons). This feature has several requirements as follows:

1. Your operating system (OS) must be Windows XP (or newer).

2. Your PC must have sufficient "horsepower" for smooth operation of two displays.

3. You must configure the second monitor to be used as part of an "extended desktop." To do this, right-click on your Windows desktop and select Properties. Click on the Settings tab. You'll see a page like this one:



Click on the monitor number "2" icon and then insure that there's a check in the box "Extend my Windows desktop onto this monitor." Click OK.

Note: If your second monitor wasn't connected to the PC and turned on when you started Windows, you may need to connect it and turn it on and then restart Windows before it will be recognized here.

4. Visit the **Playback** tab of the **Hardware Options** window. Select the **Draw directly to desktop in RGB format (no overlay)** option in order to avoid a pink screen on the second monitor during full-motion playback.

5. Visit the **Live Video** tab of the **Hardware Options** window. Select the **draw video directly to desktop** option in order to avoid a pink screen on the second monitor during live video preview and recording.

Hard Drive Utilization

This section has two options: **Use all available drives** and **Only use those where you've manually created \Video folders**. If your system has more than one hard drive or more than one partition on a single hard drive, you may allow or deny the V1 to use any combination of these volumes. When you select **use all available drives** the V1 automatically creates the necessary "Video" folders on all of your drives. If you select **Only use those where you've manually created \Video folders**, however, you are responsible for creating these folders yourself using the Windows® "My Computer" interface.

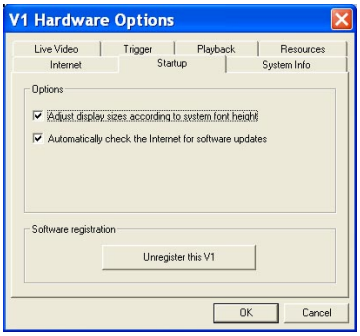
Intranet (LAN) utilization

When you "hold down" bin buttons, or move videos between bins, the V1 (by default) searches for removable media and other V1 network peers. In certain non-network cases, this behavior may cause your system to "hang" for a minute or longer before it "gives up." To disable the network search, set this option to "do not access the LAN."

If you are using a network, and experience slower than expected response times, you might try the "yes, using method 2" option in place of the default "method 1." For more information about networking multiple V1s, see the Networking section at the end of the *Working with Videos* chapter.

Startup Options

To access the Startup Options window, start the V1, select **Options**, and then click **Hardware Options**. Select the **Startup** tab. The following window will appear:



Window Mode

Historically, the V1 was designed to be used as a "full-screen" application. That is, all other programs and aspects of the Windows® operating system were to be hidden while the V1 was in operation. Beginning with version 5.0, you may now override this behavior by holding down either Shift key on your keyboard as the V1 loads. The V1 will then operate within a "window" on your computer's desktop alongside other applications that you may wish to run simultaneously. Currently this setting is not learned, and you must re-activate it each time you wish to use it.

The Window Mode will be engaged automatically if your system is set to use anything but the Normal (also called "small") font size on your Windows® Display Properties control panel. Measured in dots per inch (DPI), the normal font size is 96 DPI. At 120 DPI (125% of normal size), the font size setting is sometimes referred to as "large fonts." International versions of Windows® may have default font sizes other than 96 DPI. In this case, Window Mode will always be engaged.

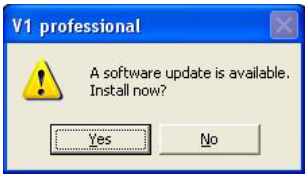
The V1's normal window size is 800x600 pixels, but changes with your system's font size setting. For example, the V1's window size increases proportionally to 1000x750 when using large fonts (125% of normal font size). In this case, therefore, a desktop resolution of at least 1024x768 pixels is required in order to view the entire V1 window.

In certain circumstances and locales, the V1 may incorrectly compensate for the system font size, causing windows to be sized incorrectly. To override this behavior, and force

an 800x600 size window, remove the check from the **adjust display sizes according to system font height** box.

Internet Updates

If your system is connected to the Internet as your V1 software loads, the software will automatically check the Interactive Frontiers website for available V1 updates.



If an update is available, a message will appear on your screen asking whether you'd like to download it. If you answer **Yes** the V1 software will close, and your Internet browser will open the page www.internetgolfacademy.com/Updates/V1/Updates.htm. This page contains details of what's new in the update. When you are ready to download, click the "Click Here to Download" link. When you are asked whether you'd like to "open of save this file on your computer," you may select **Open** to install the update immediately. Once the update package is downloaded, an installation program will start and guide you through the reset of the update installation.

In certain circumstances, the automatic update check may cause the V1 to become unresponsive at startup. To override this behavior, remove the check from the **automatically check the Internet for software updates** box.

Un-register V1

Select this option if you wish to reverse the Challenge/Response procedure that was used to register the V1 on your PC. Once unregistered, the V1 will operate in demonstration mode. To enter a new Challenge/Response code, exit the V1 and then restart it. A new Challenge/Response code may be necessary to unlock additional V1 functionality, such as dual-camera capture.

Chapter 11

Troubleshooting

If everything doesn't go as planned, read on…

Please read the FAQ (Frequently Asked Questions) section before calling for telephone support. Here, we've compiled a list of answers to our most common support call questions. If you don't find your answer there, please use the System Info window in order to tell us about your system's configuration when you contact us.

FAQ

Q: I selected dual-camera DirectShow® mode, but I receive error 800705aa or similar. Why is this?
A: To properly start with a two-camera setup, we advise that your cameras be turned off until the V1 menu window is present on screen. Then, turn your cameras on one at a time, pausing between them, and then start the V1.

Additionally, to use the dual-camera capture feature, both cameras must be supported models. We strongly recommend selecting the same brand camera. You must be using a two (or more) port OHCI compliant IEEE 1394 adapter. You must not be using an IEEE-1394 hub. Tested and supported camera models are as follows:

- Sony DCR-TRV series MiniDV and Digital 8MM camcorders
- Panasonic PV-DV series MiniDV camcorders
- Canopus ADVC-100 Digital Video Bridge

Other models and brands not listed cannot be used in a dual-camera configuration.

The dual-camera "continuous record" feature requires a fairly fast hard disk drive and processor, especially if you are using this in combination with the RGB feature to display V1 onto a TV or VCR. If you experience problems

using this feature, first make sure that your system meets our minimum requirements, that the hard drive has been de-fragmented recently, and that you have at least 1.5GB of free space.

Q: Why do my FireWire® cameras stop working intermittently or cause my system to crash?
A: If using cameras with batteries, insure they are charged, and power-saving (auto-shutoff) modes are disabled. Also, be advised that the FireWire spec calls for a maximum cable length of only 15 feet. Try turning your cameras off, then turning them back on one at a time, pausing several seconds between each camera.

Q: After a few minutes my DV Camcorder shuts itself off, and it must be turned on again. This may result in a warning message from V1 that reads "Could not start video capture. Please check cables and try again." Why is this?
A: Most DV Camcorders include a safety feature that will power the camera off if it is left idle for a set length of time with a cassette loaded. This may cause V1 to display a warning message, such as "Could not start video capture. Please check cables and try again." This is done to prevent damage to the DV cassette from the rotating tape head. Removing the cassette should prevent the camera from powering off when left idle.

Q: How can I remove the V1 user interface (tools) from my videotapes?
A: You must use a video interface called a scan converter.

Q: Does the V1 Laptop Portable unit supply power to my laptop?
A: No it does not. If your laptop's battery becomes depleted, you must connect the laptop to an external power source by using the laptop's own power adaptor.

Q: How do I move the video with the Slide tool?
A: Click the movie itself and move the mouse in any direction. In version 3.0, the video position sliders were used instead to move the video left and right.

Q: How do I center the subject in 8-key-frame time-lapse?
A: Enter Compare Mode. Use the Slide tool to center the image. This same position is used for time-lapse.

Q: In a dual-display or TV-out configuration, why does one of my displays show a pink screen during live video preview and full-speed playback, while the other appears fine?
A: If you own a computer system that does not allow you to enable multiple displays as PRIMARY displays, you will see a pink screen on any display that is not PRIMARY. See the Playback Options section in the *Video Playback* chapter for instructions on enabled RGB-only output mode.

Q: When I start the V1, the image does not fill the entire LCD panel—there is a large black border around the V1 window. The desktop returns to normal when I exit the V1. Why is this?

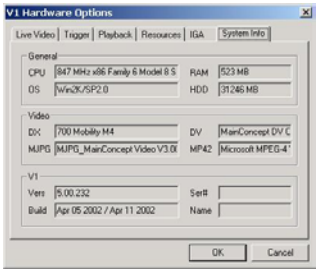
A: Your video driver is not scaling the software to fit your panel. Unlike a regular CRT monitor, LCD panels have a set resolution. When an image that is smaller than the native resolution is displayed, the image will not take the entire panel, only the actual size of the image being displayed.

Q: I get the error "Sorry! Procedure <timer/init timer> reports no foreign application responded to a DDE initiate error on line 109." What does this mean?
A: This error occurs if the color depth on your computer is set to 24bit True Color mode. The V1 video window requires either 16bit High Color or 32bit True Color mode to function properly. Please make the appropriate changes to your system color depth, restart the computer and try starting the V1 Professional software again.

Q: I get the error "ActiveX cannot create object on line xx." What does this mean?
A: This error appears if you do not have one of the following operating system updates installed: DirectX® 8 or newer, Internet Explorer® 5.5 (or newer), and Windows Media Player® 7 (or newer). Please verify your current version of these three important applications, and if install any updates if necessary

The System Info Window

To access the System Info window, start the V1, select **Options**, and then click **Hardware Options**. Select the **System Info** tab. The following window will appear:



This window contains information about your system which may be useful to a technician should you ever find it necessary to contact Interactive Frontiers for technical support for your V1.

If you email your support request, you should include no less than the Version number found in the V1 section of the window, and the contents of the OS box.

Technical Support

A variety of technical support service agreement packages are available from Interactive Frontiers. To obtain technical support, or to renew your service agreement, please contact us directly at:

+1-734-464-2841

or visit the support website:

http://www.v1golf.com/help.asp

To locate a problem using the RightNow® support Frequently Asked Questions (FAQ) feature, first select your product using the dropdown menus on the left, then enter a keyword or keywords describing the problem into the search text field, then press search. For example, if you were experiencing a problem where you only see a pink screen inside the V1 software, select V1 Professional as your product, then enter the keywords "pink screen" into the search text field and press search. Specific error codes can be searched by entering the error number that appears.

or email us at:

support@ifrontiers.com

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